

SEMICONDUCTOR DEVICE, METHOD FOR MANUFACTURING THE SAME,  
APPARATUS FOR FORMING FILM, AND METHOD FOR FORMING  
HIGH-DIELECTRIC-CONSTANT FILM

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Abstract of the Disclosure

10 A semiconductor device having a gate electrode 7b formed  
on a silicon substrate 1 through a gate insulating film is  
constituted by laminating the gate insulating film with a silicon  
oxide film 4a formed on the silicon substrate 1; an Hf silicate  
film 5a formed on the silicon oxide film 4a; and a  
nitrogen-containing Hf silicate film 6a formed on the Hf silicate  
film 5a, and containing Hf in a peak concentration of 1 atomic %  
or more and 30 atomic % or less, and nitrogen in a peak concentration  
15 of 10 atomic % or more and 30 atomic % or less.